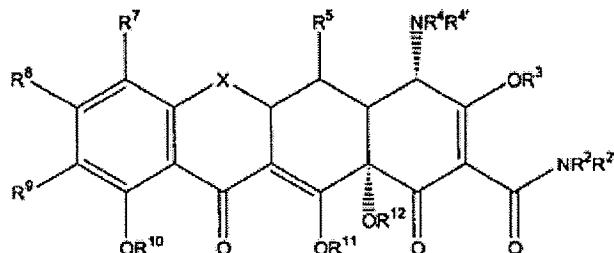


IN THE CLAIMS:

Listing of Claims:

This listing of claims will replace all prior versions of the claims and listing of the claims in the application:

1. **(Currently Amended)** A substituted tetracycline compound, wherein said compound is of the formula:



(D)

wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y})\text{Y}$, CR^6R^6 , S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^2 , R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $R^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is hydrogen, or $NR^{7c}C(=W')WR^{7a}$;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is hydrogen, or $NR^{9c}C(=Z')ZR^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted C₃-C₁₀ alkyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, substituted or unsubstituted alkyl amino, substituted or unsubstituted arylalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic, wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonyl amino, alkoxy carbonyl, aryl carbonyl, amino alkyl, aryl alkyl carbonyl, alkenyl carbonyl, alkoxy carbonyl, silyl, amino carbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acyl amino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, substituted alkyl amino, substituted arylalkyl, substituted aryl, substituted heterocyclic, or substituted heteroaromatic is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonyl amino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkyl carbonyl, alkyl amino acarbonyl, arylalkyl amino carbonyl, alkenylaminocarbonyl, alkyl carbonyl, aryl carbonyl, amino alkyl, aryl alkyl carbonyl, alkenyl carbonyl, alkoxy carbonyl, silyl, amino carbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acyl amino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkyl amino, arylalkyl, aryl, heterocyclic or heteroaromatic;

W is CR^{7d}R^{7e}, NR^{7b} or O;

W' is O or S; and

R^{7a}, R^{7b}, R^{7c}, R^{7d}, and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkyl amino, arylalkyl, aryl, heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and pharmaceutically acceptable salts thereof, provided that ~~at least one of R⁹~~ is not hydrogen when R⁷ is hydrogen.

2. **(Currently Amended)** The compound of claim 1, wherein R², R^{2'}, R³, R⁸, R¹⁰, R¹¹, and R¹² are each hydrogen.

3. **(Original)** The compound of claim 2, wherein R⁴ and R^{4'} are each alkyl.

4. **(Original)** The compound of claim 3, wherein R⁴ and R^{4'} are each methyl

5. **(Cancelled)**

6. **(Original)** The compound of claim 4, wherein R⁵ is hydrogen.

7. **(Original)** The compound of claim 6, wherein X is CH₂, and R⁷ is hydrogen.

8. **(Cancelled)**

9. **(Currently Amended)** The compound of claim 4, wherein R⁵ is hydroxyl or a prodrug moiety, and X is CHR⁶.

10. **(Currently Amended)** The compound of claim 9, wherein R⁵ is hydroxyl and R⁶ is CH₃.

11. **(Original)** The compound of claim 1, wherein R⁹ is NR^{9c}C(=Z')ZR^{9a}.

12. **(Original)** The compound of claim 11, wherein R^{9c} is hydrogen.

13. **(Original)** The compound of claim 11, wherein Z' is oxygen.

14. **(Original)** The compound of claim 11, wherein Z' is sulfur.

15. -18. **(Cancelled)**

19. **(Previously Presented)** The compound of claim 11, wherein R^{9a} is selected from the group consisting of substituted C₃-C₁₀ alkyl, alkynyl, aryl, arylalkyl, or heteroaromatic.

20. **(Cancelled)**

21. **(Previously Presented)** The compound of claim 19, wherein said substituted C₃-C₁₀ alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, amino, aryl carbonyl, halogen, hydroxy, alkylamino, alkoxy, or aryl.

22. **(Cancelled)**

23. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with an aryl group.

24. **(Original)** The compound of claim 23, wherein said aryl group is phenyl.

25. **(Previously Presented)** The compound of claim 19, wherein said substituted alkyl is substituted with one or more halogens.

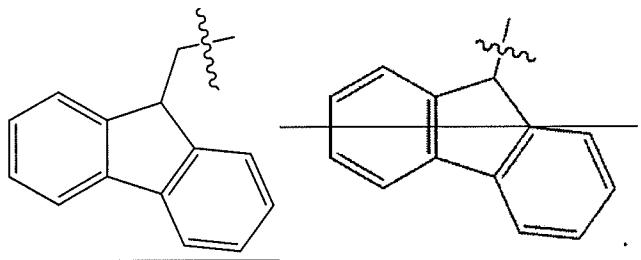
26. **(Original)** The compound of claim 24, wherein said halogen is bromine.

27.-29 (Cancelled)

30. (Original) The compound of claim 19, wherein R^{9a} is substituted or unsubstituted aryl.

31. (Original) The compound of claim 30, wherein said substituted or unsubstituted aryl is naphthyl.

32. (Currently Amended) The compound of claim 30, wherein said substituted or unsubstituted aryl is of the formula:



33. (Original) The compound of claim 30, wherein said substituted or unsubstituted aryl is phenyl.

34. (Original) The compound of claim 33, wherein said aryl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

35. (Original) The compound of claim 34, wherein said substituent is alkyl.

36. (Original) The compound of claim 35, wherein said alkyl is unsubstituted.

37. (Original) The compound of claim 35, wherein said alkyl is methyl.

38. (Original) The compound of claim 35, wherein said alkyl is substituted with one or more halogens.

39. (Original) The compound of claim 34, wherein said substituent is methoxy.

40. (Original) The compound of claim 34, wherein said substituent is selected from the group consisting of alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxycarbonyl, and amido.

41.-55. (Cancelled)

56. (Original) The compound of claim 1, wherein R⁷ is NR^{7c}C(=W')WR^{7a}.

57. (Original) The compound of claim 56, wherein R⁹ is hydrogen.

58. (Original) The compound of claim 57 wherein R^{7c} is hydrogen.

59. **(Original)** The compound of claim 57, wherein W' is oxygen.

60. **(Original)** The compound of claim 57, wherein W' is sulfur

61. **(Original)** The compound of claims 59 or 60, wherein W is NR^{7b}.

62. **(Original)** The compound of claims 59 or 60, wherein W is oxygen.

63. **(Previously Presented)** The compound of claim 57, wherein R^{7a} is selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, arylalkyl, and heteroaromatic.

64. **(Original)** The compound of claim 63, wherein R^{7a} is substituted or unsubstituted alkyl.

65. **(Original)** The compound of claim 64, wherein said alkyl is substituted with an aryl group.

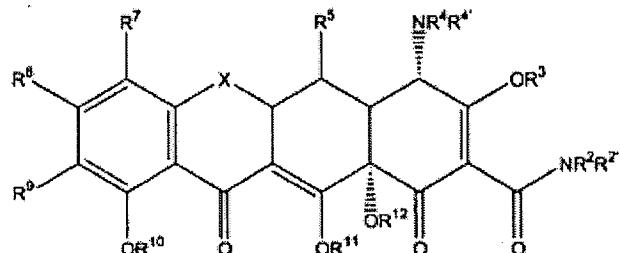
66. **(Original)** The compound of claim 63, wherein said substituted or unsubstituted aryl is phenyl.

67. **(Original)** The compound of claim 66, wherein said aryl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

68. **(Original)** The compound of claim 67, wherein said substituent is alkyl, alkoxy, or nitro.

69.-81.(Cancelled)

82. **(Currently Amended)** A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



(I)

wherein:

X is CHC(R¹³Y'Y), CR⁶R⁶, S, NR⁶, or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^2 , R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $R^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is hydrogen or $NR^{7c}C(=W')WR^{7a}$;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulthydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is hydrogen, or $NR^{9c}C(=Z')ZR^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted C_3-C_{10} alkyl, substituted alkyl, substituted or unsubstituted alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxycarbonyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylamino, substituted or unsubstituted arylalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic, wherein said substituted alkyl is substituted with halogen, amino, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxy carbonylamino, alkoxy carbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclic, alkylaryl, aryl or heteroaryl; further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted arylcarbonyl, substituted alkylamino, substituted arylalkyl, substituted aryl, substituted heterocyclic, or substituted heteroaromatic is substituted with halogen, amino,

alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl;

R^9 is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic;

W is $CR^{7d}R^{7e}$, NR^{7b} or O;

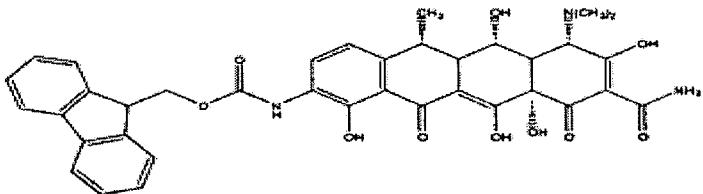
W' is O or S; and

R^{7a} , R^{7b} , R^{7c} , R^{7d} , and R^{7e} are each independently hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic, absent, or a prodrug moiety, and R^{7d} and R^{7e} may be linked to form a ring;

and pharmaceutically acceptable salts thereof, provided that at least one of R^9 is not hydrogen when R^7 is hydrogen.

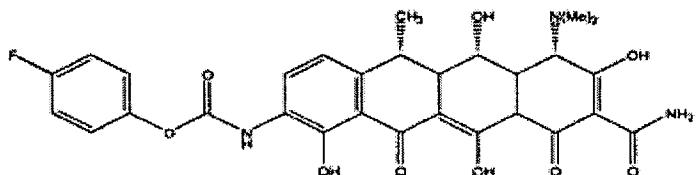
83.-102. (Cancelled)

103. (Currently Amended) The compound of claim 1, wherein said compound is



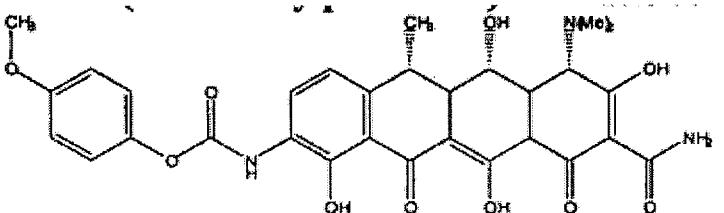
and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

104. (Currently Amended) The compound of claim 1, wherein said compound is



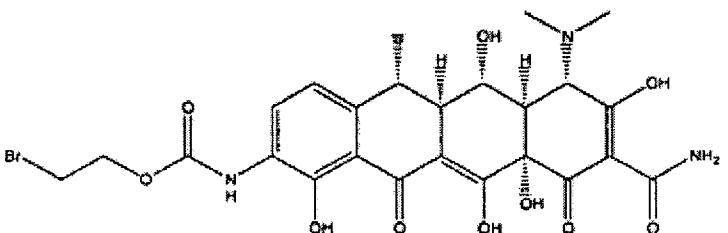
and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

105. (Currently Amended) The compound of claim 1, wherein said compound is



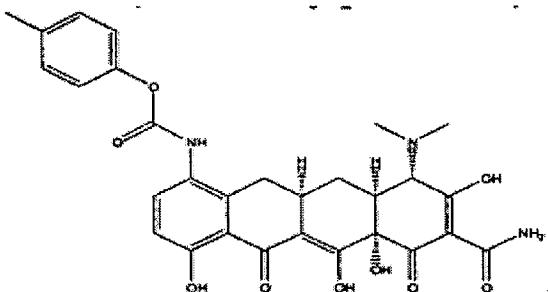
and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

106. (Currently Amended) The compound of claim 1, wherein said compound is



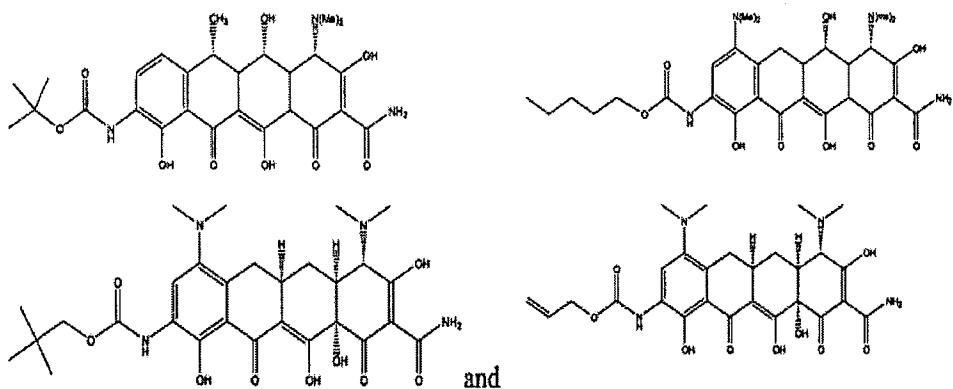
and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

107. (Currently Amended) The compound of claim 1, wherein said compound is



and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

108. (Currently Amended) A substituted tetracycline compound, wherein said compound is selected from the group consisting of



and or a pharmaceutically acceptable salt[[s]] and prodrugs thereof.

109. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 9-carbamic acid 9H-fluoren-9-yl methyl ester and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

110. **(Currently Amended)** The compound of claim 1, wherein said compound is FMOC 9-amino doxycycline and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

111. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(4'-fluorophenyl) doxycycline carbamate and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

112. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(4'-methoxyphenyl) doxycycline carbamate and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

113. **(Currently Amended)** The compound of claim 140, wherein said compound is minocycline 9-carbamic acid 9H-fluoren-9-yl methyl ester and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

114. **(Currently Amended)** The compound of claim 140, wherein said compound is FMOC 9-amino minocycline and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

115. **(Currently Amended)** The compound of claim 140, wherein said compound is 9-(4'-fluorophenyl) minocycline carbamate and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

116. **(Currently Amended)** The compound of claim 140, wherein said compound is 9-(4'-Methoxyphenyl) minocycline carbamate and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

117. **(Currently Amended)** The compound of claim 1, wherein said compound is 9-(2'-bromoethyl) doxycycline carbamate and or pharmaceutically acceptable salt[[s]] and prodrugs thereof.

118. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methylphenyl) sencycline carbamate ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

119. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 7-carbamic acid 7H-fluoren-7-yl methyl ester ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

120. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyl-1-yl) doxycycline urea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

121. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(3-methyl-1-butyl) doxycycline urea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

122. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-phenyl doxycycline urea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

123. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-t-butyl doxycycline urea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

124. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-Fmoc amino doxycycline ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

125. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-chloro-2-trifluoromethylphenyl) doxycycline urea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

126. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline carbamate ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

127. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline carbamate ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

128. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-BOC amino doxycycline ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

129. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyl-1-yl) doxycycline thiourea 5-propanoic acid ester ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

130. **(Currently Amended)** The compound of claim 1, wherein said compound is doxycycline 7-thiocarbamic acid 7H-fluoren-7-yl methyl ester ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

131. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyl-1-yl) doxycycline thiourea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

132. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(3-methyl-1-butyl) doxycycline thiourea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

133. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-phenyl amino doxycycline thiourea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

134. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-t-butyl amino doxycycline thiourea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

135. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-chloro-2'-trifluoromethylphenyl) doxycycline thiourea ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

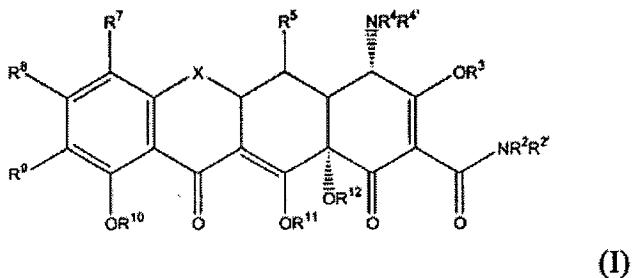
136. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-fluorophenyl) doxycycline thiocarbamate ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

137. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(4'-methoxyphenyl) doxycycline thiocarbamate ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

138. **(Currently Amended)** The compound of claim 1, wherein said compound is 7-(naphthyl-1-yl) doxycycline urea 5-propanoic acid ester ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

139. **(Currently Amended)** A tetracycline compound, wherein said compound is selected from the group consisting of:
9-neopentyl minocycline carbamate;
9-BOC amino doxycycline;
9-(n-pentyl) minocycline carbamate;
9-BOC amino minocycline carbamate;
9-(n-pentyl) minocycline carbamate;
9-prop-2'-enyl minocycline carbamate;
9-ethyl minocycline carbamate;
9-n-butyl minocycline carbamate
9-n-but-3-enyl minocycline carbamate; and
9-i-butyl minocycline carbamate; ~~and~~ or pharmaceutically acceptable salt[[s]] ~~and~~ prodrugs thereof.

140. **(Currently Amended)** A substituted tetracycline compound, wherein said compound is of the formula:



wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y}'\text{Y})\text{CR}^6\text{R}^6$, S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $\text{R}^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^2 , R^3 , R^{10} , R^{11} and R^{12} are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $\text{R}^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R^7 is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is $\text{NR}^{9c}\text{C}(=\text{Z}')\text{ZR}^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted $\text{C}_5\text{-C}_{10}$ alkyl, substituted or unsubstituted $\text{C}_4\text{-C}_{10}$ alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxycarbonyl, substituted or unsubstituted arylcarbonyl, substituted or unsubstituted alkylamino, substituted or unsubstituted arylalkyl, substituted or unsubstituted

aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic, wherein said substituted alkyl is substituted with halogen, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminealkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl, substituted arylsulfonyl, substituted alkoxycarbonyl, substituted arylcarbonyl, substituted alkylamino, substituted arylalkyl, substituted aryl, substituted heterocyclic, or substituted heteroaromatic is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkylcarbonyloxy, alkyloxycarbonyl, arylcarbonyloxy, alkoxycarbonylamino, alkoxycarbonyloxy, aryloxycarbonyloxy, carboxylate, alkylcarbonyl, alkylaminoacarbonyl, arylalkyl aminocarbonyl, alkenylaminocarbonyl, alkylcarbonyl, arylcarbonyl, aminoalkyl, arylalkylcarbonyl, alkenylcarbonyl, alkoxycarbonyl, silyl, aminocarbonyl, alkylthiocarbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acylamino, amido, imino, sulfhydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclyl, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxycarbonyl, arylcarbonyl, alkylamino, arylalkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.

141. **(Currently Amended)** The compound of claim 140, wherein R^2 , $R^{2'}$, R^3 , R^8 , R^{10} , R^{11} , and R^{12} are each hydrogen.

142. **(Previously Presented)** The compound of claim 140, wherein R^4 and $R^{4'}$ are each methyl

143. **(Previously Presented)** The compound of claim 140, wherein R^5 is hydrogen.

144. **(Cancelled)**

145. **(Previously Presented)** The compound of claim 144, wherein R^{9c} is hydrogen.

146. **(Previously Presented)** The compound of claim 144, wherein Z' is oxygen.

147. **(Previously Presented)** The compound of claim 144, wherein Z' is sulfur.

148. **(Cancelled)**

149. **(Previously Presented)** The compound of claim 144, wherein R^{9a} is substituted C_5-C_{10} alkyl, alkynyl, aryl, arylalkyl, or heteroaromatic.

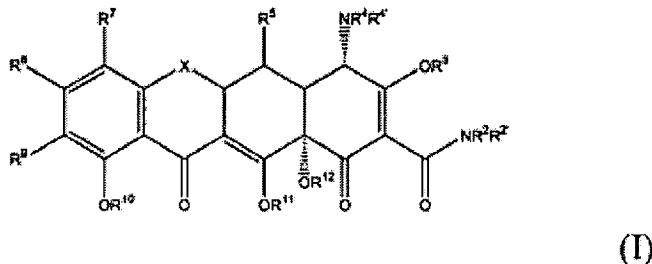
150. **(Currently Amended)** The compound of claim 149, wherein said substituted C₅-C₁₀ alkyl is substituted with one or more substituents selected from the group consisting of alkoxy carbonyl, aryl carbonyl, halogen, hydroxy, alkyl amine, alkoxy, or aryl.

151. (Previously Presented) The compound of claim 149, wherein R^{9a} is substituted or unsubstituted aryl.

152. (Previously Presented) The compound of claim 151, wherein said substituted or unsubstituted aryl is phenyl.

153. **(Previously Presented)** The compound of claim 151, wherein said aryl is substituted with one or more substituents selected from the group consisting of alkyl, alkenyl, alkynyl, aryl, alkoxy, aryloxy, alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, aryloxycarbonyl, amido, halogen, nitro, azo, alkyl sulfonyl, and arylsulfonyl.

154. (Currently Amended) A pharmaceutical composition comprising a therapeutically effective amount of a substituted tetracycline compound and a pharmaceutically acceptable carrier, wherein said substituted tetracycline is of the formula:



wherein:

X is $\text{CHC}(\text{R}^{13}\text{Y})\text{Y}$, $\text{CR}^{6'}\text{R}^6$, S, NR^6 , or O;

R^2 is hydrogen, alkyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^4 and $R^{4'}$ are each hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, aryl, heterocyclic, heteroaromatic or a prodrug moiety;

R^2 , R^3 , R^{10} , R^{11} and R^{12} and are each hydrogen or a pro-drug moiety;

R^5 is hydrogen, hydroxyl, or a prodrug moiety;

R^6 , $R^{6'}$, and R^8 are each independently hydrogen, alkyl, alkenyl, alkynyl, aryl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylamino, arylalkyl, or halogen;

R⁷ is dialkylamino;

R^8 is hydrogen;

R^{13} is hydrogen, hydroxy, alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

Y' and Y are each independently hydrogen; halogen; hydroxyl; cyano, sulphydryl; amino; alkyl; alkenyl; alkynyl; alkoxy; alkylthio; alkylsulfinyl; alkylsulfonyl; alkylamino; or an arylalkyl;

R^9 is $NR^{9c}C(=Z')ZR^{9a}$;

Z is O;

Z' is O or S;

R^{9a} is unsubstituted or substituted C_5-C_{10} alkyl, substituted or unsubstituted C_4-C_{10} alkenyl, substituted or unsubstituted alkynyl, substituted or unsubstituted alkoxy, substituted or unsubstituted alkylthio, substituted or unsubstituted alkylsulfinyl, substituted or unsubstituted alkylsulfonyl, substituted or unsubstituted arylsulfonyl, substituted or unsubstituted alkoxy carbonyl, substituted or unsubstituted aryl carbonyl, ~~substituted or unsubstituted alkylamino~~, substituted or unsubstituted arylalkyl, substituted or unsubstituted aryl, substituted or unsubstituted heterocyclic, substituted or unsubstituted heteroaromatic, wherein said substituted alkyl is substituted with halogen, hydroxyl, alkoxy, alkyl carbonyloxy, alkyloxy carbonyl, aryl carbonyloxy, alkoxy carbonyl amino, alkoxy carbonyloxy, aryloxy carbonyloxy, carboxylate, alkyl carbonyl, alkyl amino acarbonyl, aryl alkyl aminocarbonyl, alkenyl aminocarbonyl, alkyl carbonyl, aryl carbonyl, amino alkyl, aryl alkyl carbonyl, alkenyl carbonyl, alkyl carbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthio carbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acyl amino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclic, alkylaryl, aryl or heteroaryl; further wherein said substituted alkenyl, substituted alkynyl, substituted alkoxy, substituted alkylthio, substituted alkylsulfinyl, substituted alkylsulfonyl; substituted arylsulfonyl, substituted alkoxy carbonyl, substituted aryl carbonyl, substituted alkyl amino, substituted arylalkyl, substituted aryl, substituted heterocyclic, or substituted heteroaromatic is substituted with halogen, amino, alkyl, alkenyl, alkynyl, hydroxyl, alkoxy, alkyl carbonyloxy, alkyloxy carbonyl, aryl carbonyloxy, alkoxy carbonyl amino, alkoxy carbonyloxy, aryloxy carbonyloxy, carboxylate, alkyl carbonyl, alkyl amino acarbonyl, aryl alkyl aminocarbonyl, alkenyl aminocarbonyl, alkyl carbonyl, aryl carbonyl, amino alkyl, aryl alkyl carbonyl, alkenyl carbonyl, alkoxy carbonyl, silyl, aminocarbonyl, alkylthio carbonyl, phosphate, aralkyl, phosphonato, phosphinato, cyano, acyl amino, amido, imino, sulphydryl, alkylthio, sulfate, arylthio, thiocarboxylate, alkylsulfinyl, sulfonato, sulfamoyl, sulfonamido, nitro, cyano, azido, heterocyclic, alkylaryl, aryl or heteroaryl; and

R^{9c} is hydrogen, alkyl, alkenyl, alkynyl, alkoxy, alkylthio, alkylsulfinyl, alkylsulfonyl, arylsulfonyl, alkoxy carbonyl, aryl carbonyl, alkyl amino, aryl alkyl, aryl, heterocyclic or heteroaromatic; and pharmaceutically acceptable salts thereof.